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PHOTOGRAPHIC INTELLIGENCE MEMORANDUM

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28 November 1955

ANTARCTICA

N.I.S. 69, Chapter IX

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National Intelligence Survey

ANTARCTICA

Chapter IX, Section 90

Map and Chart Appraisal

A. General map, chart, and aerial photo coverage.

5. Aerial Photography

Motion picture photography and intermittent hand-held oblique photographs have been taken by Wilkins, Byrd, Ellsworth and several other expeditions from 1928 to the present time. However, described below are only those expeditions that took aerial photography of a type, quantity, and quality that could be used for major map and chart revision. The Index of Aerial Photography (Fig. 92 -) shows the approximate areas covered by this mapping photography.

a. TRIMETROGON PHOTOGRAPHY

U. S. Naval Task Force 68, in the 1946-1947 season executed an intensive trimetrogon photo reconnaissance survey of the coasts of Antarctica. Most of the coast between 15°E and 170°E and between 95°W and 130°W was photographed by single, double or even triple trimetrogon flights parallel to the general shoreline, with occasional sorties into the interior averaging 200 miles in depth. In addition, photo reconnaissance was carried out over parts of the polar plateau east, west, and south of the Ross Ice Shelf. 65,000 ^{six-inch focal} ~~6-inch focal~~ length photographs at a scale of 1:20,000 were obtained. The following season, 1947-1948, U. S. Naval Task Force 39 sent surveyors ashore at selected points to obtain the ground control necessary for utilization of the aerial photography for mapping purposes.

The original film is available at the Office of Naval Intelligence, Washington, D. C.

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The Ronne Antarctic Research Expedition during the 1947-1948 season made a trimetrogon photo reconnaissance survey of Alexander I Island and both coasts of the Palmer Peninsula to their southern^{most} limits, including the Filchner Shelf Ice and portions of Edith Ronne land. 14,000 six-inch focal length photos were obtained, varying in scale from 1:13,000 to 1:28,000. Original film is available at Photo Records and Service Division (PR and SD) Air Force, Pentagon, Washington, D. C.

An Argentine expedition in the 1950-1951 season obtained trimetrogon photographs of the Danco Coast and other areas near the tip of Palmer Peninsula and some of the adjacent islands. Reportedly, other aerial photography has been taken in this general area by various Argentine expeditions. Copies of this Argentine photography although not available in the U. S., may be requested from PR and SD.

b. OBLIQUE MAPPING PHOTOGRAPHY

The Deutsche Antarktische Expedition, 1938-1939, took 12,000 oblique airphotos in NEW SCHWABENLAND. The area photographed includes most of the coastline from approximately 5°W to 20°E and much of the interior to a depth of approximately 200-250 miles. The original negatives were destroyed during World War II, but approximately 10,000 photographs were salvaged by the [REDACTED]

The U. S. Antarctic Service, 1939-1941, obtained 13,575 mapping oblique photographs of portions of the Ross Ice Shelf, the coast and much of the interior of Marie Byrd Land from 133°W to 158°W. In addition, mapping oblique photos were taken of Alexander I and Charcot Islands, and the southwest and southeast coast of Palmer Peninsula. These negatives are filed in the National Archives, Washington, D. C.

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The British Graham Land (Rymill) Expedition, 1934-1937, obtained mapping oblique photography of the west central coast of Palmer Peninsula.

The Christensen Sixth Expedition, 1936-1937, obtained 2200 mapping oblique photos along sections of the coast of Queen Maud Land from approximately 20°E to 80°E.

A Swedish Air Unit attached to the combined British-Norwegian-Swedish Expedition (1950-1952) photographed the shelf ice coastline from 0°-20°W and portions of the mountainous interior up to 250 miles inland.

Photography resulting from the above-mentioned Rymill, Christensen, and combined British-Norwegian-Swedish Expeditions, although not available in the U. S. [REDACTED]

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Chapter IX, Section 90

Map and Chart Appraisal

B. Major mapping, charting, and aerial photography deficiencies.

1. Mapping data

c. AERIAL PHOTOGRAPHY

The major deficiency in aerial photography is the almost total lack of mapping aerial photographic coverage of the interior of the continent. The greater portion of the coastline is covered with trimetrogon photography, but four significant sections of the coastline still remain to be adequately photographed: 15°E to 42°W., 75°W to 97°W., 144°E to 151°E and the north-south coast of Victoria Land from 71°S to 77°S.

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